

CLAIMS

What is claimed is:

- 1 1. A trolling motor comprising:
2 an electric motor;
3 a first battery lead for connecting the trolling motor to a first terminal of a battery;
4 a second battery lead for connecting the trolling motor to a second terminal of a
5 battery;
6 a field effect transistor having a source connection, a drain connection, and a gate
7 connection, said drain connection connected to said first battery lead, said
8 source connection in electrical communication with said electric motor, and
9 said gate connection in communication with said second battery lead such
10 that when said first battery lead is connected to said first battery terminal and
11 said second battery lead is connected to said second battery terminal, said
12 field effect transistor will be driven to a conductive state, and when said first
13 battery lead is connected to said second battery terminal and said second
14 battery lead is connected to said first battery terminal, said field effect
15 transistor will be driven to a non-conductive state.

- 1 2. The trolling motor of claim 1 wherein said field effect transistor further includes an
2 intrinsic diode having an anode and a cathode, said anode connected to said source connection and
3 said cathode connected to said drain connection.

1 3. The trolling motor of claim 1 wherein said field effect transistor is an n-channel
2 device and wherein said first battery terminal is a negative battery terminal.

1 4. The trolling motor of claim 1 further comprising a pulse width modulated motor
2 controller, said motor controller comprising:

3 a current sense input for measuring the voltage across said field effect transistor, said voltage
4 across said field effect transistor being substantially proportionate to the electrical
5 current flowing through said electrical motor;

a pulse width modulated output for electrically driving said electrical motor, said pulse width
modulated output being responsive to said current sense input such that, when the
voltage at said current sense input exceeds a predetermined level, the duty cycle of
said pulse width modulated output is reduced to an overload monitoring level.